This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Claim 1 (currently Amended)   A method of <u>a digital signal processor for</u> image filtering, comprising:

(a) computing a modified auto-correlation in a horizontal direction for each pixel in an image, wherein the modified autocorrelation coefficient is computed <u>in horizontal direction near a pixel of interest</u> utilizing:

$$\rho = R_{xx}(1)/(R_{xx}(0)+\delta)$$

<u>wherein a negative modified autocorrelation coefficient indicates a spectrum distribution is around high frequency region and a positive modified autocorrelation coefficient indicates a spectrum distribution is around a low frequency region</u>;

(b) filtering said image with a lowpass filter, wherein said filtering adaptively changes according to the computed modified auto-correlation <u>by applying said filtering to regions with the positive modified autocorrelation coefficient and applying a low pass filter according to intensity, wherein the filtering intensity is proportional to</u> <u>$(\rho - \rho_{th})$</u>, <u>where ρ_{th} is a user defined parameter</u>; and

(c) interpolating said image and said filtered image from step (b) wherein said interpolating at said each pixel depends upon said modified auto-correlation ~~in said horizontal direction~~.

Claim 2 (previously Amended) The method of claim 1, further comprising:

(a) after steps (a)-(c) of claim 1 repeating steps (a)-(c) of claim 1 with said horizontal direction replaced by a second direction, said second direction perpendicular to said sin horizontal gle direction; and with said image of step (c) replaced by said interpolated image using said modified auto-correlation in said horizontal direction.

Claim 3 (original) The method of claim 1, wherein:

(a) said modified auto-correlation of step (a) of claim 1 is $R_{xx}(1)/(R_{xx}(0) + \delta)$ where $R_{xx}(.)$ is the auto-correlation function for the pixel values in an interval about said each pixel and with the DC component removed, and where δ is a parameter.

Claim 4 (original) The method of claim 3, wherein:

(a) said interpolating of step (c) of claim 1 depends upon the amount $R_{xx}(1)/(R_{xx}(0) + \delta)$ of claim 3 exceeds a threshold.

Claim 5 (original) The method of claim 1, wherein:

(a) said image is a color channel of a color image.